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TITLE OF THE INVENTION

PAIRED PROMOTION ARCHITECTURE

BACKGROUND OF THE INVENTION

Field of the Invention:

This invention is directed toward effectively targeting promotions. More specifically, this invention is directed toward effectively targeting promotions by pairing delivered promotions to maximize the likelihood of exercise.

Discussion of the Background:

Predictive targeting describes a marketing technique wherein marketing efforts are directed to an individual or group of individuals that have characteristics which indicate the likelihood of a certain behavior, such as a purchase and/or exercising a promotion. The examined characteristics of the individual or group commonly include a historical record of purchases and/or demographic data. By targeting marketing efforts to an individual or group considered to be likely to be interested in a product according to a predictive profile, the expense of marketing can be reduced and even small groups of individuals who are likely to be interested in a product can receive promotions regarding the product on a low cost per capita basis. A more complete description of predictive targeting and marketing is given, e.g., in "The Direct Marketing Handbook," Edward L. Nash, ed., McGraw-Hill, New York, 1992, the entire contents of which are incorporated herein by reference, and in United States Patent Nos. 6,026,370, 5,974,399, 5,892,827, 5,832,457, 5,612,868, 5,173,851, 4,910,672, 6,014,634, 6,055,573 the entire contents of all of which are incorporated herein by reference.

Since historical purchase records only indicate what a consumer has purchased in the past, promotions that are targeted using only purchase history will not effectively introduce a consumer to a new product and/or a new product class. For example, if a consumer has never purchased a product from the snack food product class (e.g., chips, pretzels, etc.), then a traditional practitioner of targeted marketing would most likely never provide a promotion for a product in this class to this a consumer. Rather, the traditional practioner of targeted

marketing would likely confine the provision of promotions to those consumers who have purchased products in this class previously, greatly limiting the population pool that receives a promotion and the opportunity to grow this population pool. In other words, a traditional practitioner of targeted marketing would consider a promotion for a product in this product class to only be "low relevance," or of marginal interest to the consumer and unlikely to be exercised. As such, there is no chance given to the possibility that a consumer might try a new product and/or product class.

Although a mass marketer might provide a "low relevance" promotion to such a consumer, the likelihood that such promotions would be exercised remains quite low, since, by definition, these promotions are mass distributed and must, e.g., catch the consumer's attention and convince the consumer of the desirability of a product purchase.

A similar problem exists with the introduction of a new product and/or product class. For example, with the technological development of new products and/or product classes, or when a vendor location starts carrying a new product and/or product class, there is no purchase history record for any consumers. In these cases, there is no information that a traditional practitioner of targeted marketing can use to identify a population for whom the promotion is likely to be "relevant." The practitioner of targeted marketing who wishes to provide promotions is thus reduced to a mass marketer, randomly scattering promotions across a large population base, with very low promotion exercise rates and high distribution costs per promotion exercised.

SUMMARY OF THE INVENTION

Accordingly, one object of this invention is to provide a novel method, system, and computer-readable medium for providing parameters that can be used to more effectively target promotions based on a historical record of consumer behavior and/or demographic information.

Another object of this invention is to provide a novel method, system, and computer-readable medium for providing parameters that can be used to more effectively target promotions based on a historical record of consumer behavior and/or demographic information, even when there is little or no historical record of consumer behavior and/or

demographic information in regard to a particular product industry, product class, product type, and/or product.

A further object of this invention is to provide a novel method, system, and computer-readable medium for that provides parameters that can be used to predict consumer behavior based upon data collected with minimal effort by the consumer.

An object of one particular embodiment of this invention is to provide a novel method, system, and computer-readable medium for providing parameters that can be used to more effectively target promotions for a product in the packaged goods industry based on a historical record of consumer behavior and/or demographic information, even when there is little or no historical record of consumer behavior and/or demographic information in regard to a particular product class that contains the particular product.

An object of another particular embodiment of this invention is to provide a novel method, system, and computer-readable medium for providing parameters that can be used to more effectively target promotions for a product in the packaged goods industry based on a historical purchase record, even when there is little or no historical purchase record of a particular product class that contains the particular product.

These and other objects of the invention are realized by providing a novel method, system, and computer-readable medium that use a historical record of consumer behavior and/or demographic information relating to a first product and/or product class to identify a "more relevant" promotion that is to be "paired" with a second "low relevance" product and/or product class. By pairing a "more relevant" promotion with a "low relevance" promotion, the consumer's attention can be captured and the likelihood that the "low relevance" promotion will be exercised increased. In one embodiment, the product and/or product class is in the packaged good industry. In another embodiment, the "paired" promotions are printed on a single piece of paper. In another embodiment, the "paired" promotions are mailed in a single circular. In another embodiment, the "more relevant" promotion and the "low relevance" promotion relate to products that are produced by a same promoter. In another embodiment, the "more relevant" promotion and the "low relevance" promotion relate to products that are produced by different promoters. In another embodiment, the "more relevant" promotion and the "low relevance" promotion relate to products that are produced by different promoters, and the promoter with the "low relevance"

promotion compensates the promoter with the "more relevant" promotion. In another embodiment, the relevancy of a promotion is determined based upon purchase history. In another embodiment, the relevancy of a promotion is determined based upon the number of times a product is purchased. In another embodiment, the relevancy of a promotion is determined based upon the number of times a product category is purchased. In another embodiment, the relevancy of a promotion is determined based upon the loyalty of a consumer to a brand (e.g., how often the consumer purchased a particular brand). In another embodiment, the relevancy of a promotion is determined based upon the volume of consumer purchases. In another embodiment, the relevancy of a promotion is determined based upon the frequency of consumer purchases. In another embodiment, the relevancy of a promotion is determined based upon the value (dollar or relative) of the promotion. In another embodiment, the relevancy of a promotion is determined based upon the location where the promotion can be exercised. In another embodiment, the pairing is performed to promote a product to a consumer who has never or only rarely purchased the product. In another embodiment, the pairing is performed to promote a new product. In another embodiment, the pairing is performed to promote a product new to a location. Other embodiments entail the combination of one or more of any of the embodiments described above. For example, the relevancy of a product may be determined based on loyalty and the frequency of purchase.

As used herein, the term "promotion" refers to any offer, advertisement, incentive, coupon, and/or commercial for promoting one or more goods and/or services.

As used herein, to "exercise" a promotion refers to any redemption, consumption, employment, application, availment, and/or weilding of a promotion.

As used herein, the "relevancy" of a promotion refers to the likelihood that a promotion will be exercised.

As used herein, to "pair" promotions refers to any association of two or more promotions including printing together, requiring exercise together, displaying together, and/or showing together. Contrary to some common usages of the word "pairing," the present invention is not limited to associating only two promotions. Thus, three or more promotions may be "paired."

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same become better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

FIG. 1 illustrates an exemplary network structure for pairing more relevant promotion(s) with low relevance promotion(s);

FIG. 2 illustrates an exemplary network structure for pairing more relevant promotion(s) with low relevance promotion(s);

FIG. 3a and 3b illustrate two exemplary data records for storing promotion selection and production data and consumer identification data;

FIGS. 4a and 4b illustrate two exemplary data records for storing exercised promotion data and consumer demographic data;

FIGS. 5a and 5b illustrate two exemplary data records for consumer purchase history data and analysis tool data;

FIG. 6 is a flow chart that illustrates an exemplary method for performing the present invention;

FIG. 7 is a flow chart that illustrates another exemplary method for performing the present invention;

FIG. 8 is a flow chart that illustrates a method for providing paired promotions by identifying consumers who are likely for find at least one promotion of the paired promotions more relevant;

FIG. 9 is a flow chart that illustrates another exemplary method for performing the present invention; and

FIG. 10 illustrates an exemplary computer system that can form several different units in an embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to FIGS. 1 and 2 thereof, which illustrate exemplary network structures for targeting promotions based upon a historical record of promotion usage. These network structures will include at least one

vendor interaction site **630**, **640**, **650**, **670**, and/or **680** that is connected by way of a network **620** to a central database system **610**. In alternate embodiments, network **620** can be dispensed with in whole or in part, and the one or more vendor interaction site **630**, **640**, **650**, **670**, and/or **680** can include the data and functionality herein attributed to the central database system **610**. This is explicitly illustrated in vendor interaction site **650** of FIGS. 1 and 2 which contain a promotion storage table **613** and consumer identification table **614** and vendor interaction site **680** of FIG. 2 which contains an analysis tool table **618**, also found in central database system **610** of FIG. 1. Thus, the network **620** can be implemented either as a communications or telecommunications network, or as an electrical lead, wire, or bus within a computer. As illustrated in FIG. 2, the central database system **610** of FIG. 1 can be divided into a plurality of database systems, such as central database system **610** and other database system **660** of FIG. 2, each directed to a subset of the data and functionality ascribed to the central database system **610** illustrated in FIG. 1. Furthermore, some embodiments of the network structure may include a vendor interaction site **650** which can combine some or all of the structures and/or functionality ascribed to central database system **610** with a vendor interaction site **630**, **640**, and/or **670**. As illustrated in FIGS. 1 and 2, the vendor interaction site **650** is connected to the central database system by way of network **620**. This is not necessarily the case, and the vendor interaction site **640** and the central database system **610** can be combined into one or more physically discrete units that may or may not be connected to a network.

The processor **611** of central database system **610** and other database system **660** is used for coding and decoding data transmitted over network **620**, controlling reading and writing of data in tables **613**, **614**, **615**, **616**, **617**, and **618**, and analyzing the data in tables **613**, **614**, **615**, **616**, **617**, and **618**. The processor **611** (and vendor terminals **632**, **642**, **652**, and **682**) can be any processor configured for high volume data transmission and performing a significant number of mathematical calculations in processing communications (possibly as a webserver), database searches, and computational algorithms. A conventional personal computer or workstation with sufficient memory and processing capability may be configured to act as processor **611** (and vendor terminals **632**, **642**, **652**, and **682**). A PENTIUM III microprocessor such as the 1GHz PENTIUM III for the SC 242 manufactured by Intel Inc., a Motorola 500 MHz POWERPC G4 processor, and the Advanced Micro

Devices 1 GHz AMD ATHLON processor may all be used as the processor **611** (and vendor terminals **632**, **642**, **652**, and **682**). The tables **613**, **614**, **615**, **616**, **617**, and **618** may reside or be stored on any suitable processor-accessible data medium, including but not limited to any type of disk including floppy disks, optical disks, CD-ROM, magneto-optical disks, ROMs, RAMs, EPROMs, EEPROMs, flash memory, magnetic or optical cards, or any type of media suitable for storing electronic data.

The network **620** may be a local area network, a wide area network (such as the Internet), a virtual private network, and/or a connection via a public switched telephone network. In an exemplary embodiment, the network **620** includes a number of connection modalities, including a cable-modem connection, a DSL connection, a dial-up modem connection, and/or other suitable connection mechanisms.

The first vendor interaction site **630** includes a vendor terminal **632** that would be located at, e.g., the check-out counter of a store, a vending machine, a central location shared by several stores, a mobile kiosk at a central location in a trade show, flea market, or street fair, an airline ticket counter, an entrance of a public accomodation such as a ballpark, nightclub, casino, or movie theater, a restaurant, a telephone where sales orders are placed, or even an individual's home computer in the case of Internet transactions. The vendor terminal **632** can be formed by a processor similar to processor **611**, but in an exemplary embodiment it is simply dedicated to the reception and transmission of data over network **620** and the coding and decoding of data received from promotion input device **638**, ID input device **638**, and output to promotion output device **630b**.

Vendor interaction site **630** is designed to be operated by the vendor and/or the potential customer. When the vendor interaction site **630** is placed at a position where the vendor can control the operation of the device (e.g., check-out counter, entrance to club or theater, airline ticket counter), the vendor is the party primarily responsible for the maintainence of the site. However, in certain transactions, such as in the case of Internet transactions, the vendor interaction site **630** may be physically removed from the vendor and owned/operated by, e.g., a consumer. Thus, an individual consumer's home personal computer can form a vendor interaction site **630**, even though the vendor is not responsible for the site. Some locations of the vendor interaction site **630**, such as at a mobile kiosk at a flea market or trade show, may include having a 3rd party be responsible for the vendor

interaction site **630**.

In some embodiments, vendor interaction site **630** can include a promotion input device **636** such as a keyboard, touch screen, computer mouse, bar code reader, magnetic reader (including strip, disk, and tape reader), smart card reader, pressure sensor, motion detector, electromagnetic receiver, voltmeter, heat sensor, and other transducer capable of receiving promotion identification information. One common example is a bar code reader that transduces barcodes on coupons at a supermarket check-out counter.

The exemplary vendor interaction sites **630** also includes an identification input device **638** that receives identification information from a consumer. In the exemplary vendor interaction site **630**, the received identification information is forwarded to the central database system **610** where processor **611** compares it with previously stored information found in consumer identification table **614** to provide a confirmed identification of the consumer. Identification input device **638** can be any of a number of devices that receive and/or transduce identifying information regarding a consumer. Examples of embodiments of identification input device **638** that transduce identifying information include keyboards, touch screens, computer mouses, bar code readers, magnetic readers (including strip, disk, and tape readers), smart card readers, pressure sensors, motion detectors, electromagnetic receivers, voltmeters, heat sensors, voice transduction devices (e.g., microphones), digital cameras, fingerprint readers, iris recognition devices, genetic identification devices, and other transducers capable of transducing identification information regarding an individual and transferring this information to a digital processor. Examples of embodiments of identification input device **638** that receive identifying information without performing a transduction of a physical parameter include processors configured to receive digitized signals, images, sounds, patterns, and/or other information and analog-to-digital converters configured to convert analog signals, images, sounds, patterns, and/or other information into a digital format. Thus, the identification input device **638** of the vendor interaction site **630** need not conduct the actual transduction of the identification information, but rather identification input device **638** must simply be capable of receiving identification input from a consumer. One particular example of an identification input device **638** is a preferred customer card reader at a checkout counter in a supermarket.

Since the vendor interaction site **630** (including the identification input device **638**)

can be operated by a consumer and/or third party, the identification information can be a code or password provided by, e.g., a vendor for use by a particular customer. This can include, for example, a cookie placed on the consumer's home computer. Regardless of the nature of the identifying information, it is used to "identify" the consumer.

Regardless of the nature of identification input device **638**, once identification data is transduced and/or received, it can be transferred from vendor terminal **632** to processor **611** of central database system **610**. Naturally, this can be done by way of a network **620**, or alternatively a processor similar to processor **611** can be part of vendor interaction site **630** (as shown in vendor interaction site **650**). Regardless of the location of processor **611**, the processor **611** can compare the received identification information to previously stored identification information found in consumer identification table **614** to determine the identity of the consumer. An exemplary data record that could be found in identification table **614** is illustrated as Data Record B **720** of FIG. 3b. Once the identity of the consumer has been determined, it can be used, e.g., to add data records to the exercised promotion table **615**, to identify relevant records found in the consumer demographic table **616** or the consumer purchase history table **617**, and/or to select and/or produce paired promotions using analysis tools table **618** in conjunction with promotion storage table **613**.

In some embodiments, a new record can be added to the exercised promotion table **615** once the identity of both the promotion and the consumer is available to the processor **611**. This record can include information such as the price of the product for which the promotion is being exercised, the store in which the product is being exercised, the value of the promotion, and the number of other promotions exercised simultaneously with a particular promotion. An exemplary data structure of a record included in exercised promotion table **615** is illustrated in data record C **730** of FIG. 4a. Once processor **611** stores the information related to the exercise of one or more promotions in exercised promotion table **615**, this information can accessed by processor **611** for analysis to determine, e.g., the relevancy of a promotion and/or to identify a more relevant promotion for a product and/or product class. This will be discussed in more detail later.

In some embodiments, the identity of the consumer can be used to locate a relevant record in consumer demographic table **616**. Consumer demographic table **616** can contain data regarding the demographics of the individual consumer such as, e.g., age, profession,

gender, race, education level, marital status, number of children, pet ownership, and other demographic factors. In one embodiment, this demographic information can be accessed by processor **611** for analysis to determine, e.g., the relevancy of a promotion and/or to identify a more relevant promotion for a product and/or product class. This will be discussed in more detail later. An exemplary data structure of a record included in consumer demographic table **616** is illustrated in data record D **740** of FIG. 4b.

In some embodiments, the identity of the consumer can be used to locate a relevant record in consumer purchase history table **617**. Consumer purchase history table **617** can contain data regarding the purchase history of the individual consumer such as, e.g., products previously purchased, the frequency of certain purchases, the name brands of certain purchases, the price of certain purchases (either in absolute terms or relevant to other available products), classes of products previously purchased, and locations where products are purchased. An exemplary data structure of a record included in consumer purchase history table **617** is illustrated in data record E **750** of FIG. 5a. Once processor **611** identifies the potential customer, the consumer's purchase history in consumer purchase history table **617** can accessed by processor **611** to determine, in whole or in part, e.g., the relevancy of a promotion and/or to identify a more relevant promotion for a product and/or product class. This will be discussed in more detail later. Naturally, the consumer's demographic information in consumer purchase history table **617** can be combined with the consumer's demographic characteristics in consumer demographic table **616** and/or the consumer's promotion exercise record in exercised promotion table **615** to more accurately identify the relevancy of a promotion and/or a more relevant promotion.

In some embodiments, a variety of information regarding analysis tools is stored in analysis tools table **618** of central database system **610**. Analysis tools table **618** can contain data regarding, e.g., weighting coefficients for certain demographic and/or purchase record information, methods for analyzing various types of data, methods for extracting various types of data, methods for filtering various types of data, and/or other information that may help a practitioners of predictive targeting to determine suitably paired promotions by determining, e.g., the relevancy of a promotion and/or to identify a more relevant promotion for a product and/or product class. Plural versions of analysis tool information can be stored to accommodate the preferences of different practitioners of predictive targeting, seasonal

variations, product classes, consumer class, and/or other factors as so desired. An exemplary data structure of a record included in analysis tools table **618** is illustrated in data record F **760** of FIG. 5b. One or more specific analysis tool records can be selected from analysis tools table **618** by a practitioner of targeted marketing as desired, using, e.g., a vendor interaction site **640** as discussed below. As with, e.g., the data tables **613**, **614**, **616**, **617**, and **618**, analysis tools table **618** need not be included in central database system **610**, but can instead be located at a vendor interaction site **680** as illustrated in FIG. 2.

Promotion information that will allow the vendor and/or maintainer of the central database system **610** to determine the relevancy of a promotion, select a more relevant promotion, and/or provide paired promotions by way of the promotion output device **634** at the vendor terminal **630** is found in the promotion storage table **613**. Information located in promotion storage table **613** can therefore include information that is used to determine the relevancy of a promotion (to a consumer that is, e.g., identified by identification input device **638**) as well as to produce the promotion itself (as part of the pair) at promotion output device **634**. The information necessary to produce a promotion can include the value of the promotion, a product to which the promotion relates, a barcode or other identifier to be included upon the promotion, and/or any image or other packaging information related to the promotion. As mentioned above, if the promotion storage table **613** is located at the vendor interaction site (as explicitly illustrated in vendor interaction site **650**), the information necessary to produce a promotion need not be transmitted over network **620** to central database system **610**. An exemplary data record that could be found in promotion storage table **613** is illustrated as Data Record A **710** of FIG. 3a.

Information related to two or more paired promotion or for determining two or more paired promotions can be selected from promotion storage table **613** by one of the analysis tools found in analysis tools table **618**, and forwarded to vendor interaction site **630** by way of network **620** as desired. After the information is received at vendor interaction site **630**, the paired promotions can be output using promotion output device **634**. Promotion output device **634** can be any of a number of different devices, including a computer monitor, printers (paper or otherwise), magnetic writing devices (including disk drives, magnetic strip writers, tape writers), bar code writers, smart card writers, television screens, radio broadcast, Internet data transmission, print advertisement in a newspaper or newsletter, or simply

electronic confirmations communicated automatically to another device, such as, for example, a check-out register or a credit card billing machine. In one embodiment, the promotion output device **634** prints a pair of coupons upon a single piece of paper immediately after an identified consumer checks out at a supermarket cashier register. In general, the promotion output device **634** somehow pairs or associates one or more more relevant promotion(s) with one or more low relevance promotion(s).

Paired promotions need not be output at the same vendor interaction site **630** (and/or simultaneously) where consumer identification and/or promotion information is received. This is illustrated explicitly by vendor interaction site **640**, which shows a vendor interaction site without either a promotion or an identification input device. Rather, vendor interaction site **630** simply contains a request input device **646**, through which a vendor wishing to practice predictive targeting can request the identification of paired promotions for a consumer and/or a suitable consumer for particular paired promotions. This request is transmitted by processor **642** through network **620** to central database system **610**, where information relating to the paired promotions and/or a suitable consumer for the particular paired promotions is identified, and returned to processor **642**. Upon receipt of the information at processor **642**, information relating to the paired promotions and/or consumer is transmitted to promotion/address output device **644**. If the request input at request input device **646** was for a consumer suitable for certain paired promotion, then promotion/address output device **644** will output an address label, email address, and/or other information and/or item that insures that the particular paired promotions will be delivered to a suitable consumer. If the request input at request input device **646** was for paired promotions for a certain customer, then promotion/address output device **644** will output the determined paired promotions for the consumer.

Request input device **646** can be a device such as a keyboard, touch screen, computer mouse, bar code reader, magnetic reader (including strip, disk, and tape reader), smart card reader, pressure sensor, motion detector, electromagnetic receiver, voltmeter, heat sensor, and other transducer capable of receiving request information. Promotion/address output device **644** can be any of a number of different devices, including a computer monitor, printers (paper or otherwise), magnetic writing devices (including disk drives, magnetic strip writers, tape writers), bar code writers, smart card writers, television screens, radio broadcast, Internet

data transmission, print advertisement in a newspaper or newsletter, or simply electronic confirmations communicated automatically to another device, such as, for example, a check-out register or a credit card billing machine. In one embodiment, request input device **646** is a computer keyboard operated by a practitioner of targeted marketing, and promotion/address output device **644** is a address label printer used to provide a mail address to a suitable promotion.

Vendor interaction site **650**, in addition to containing both a promotion output device **634** and an identification input device **638**, also contains promotion storage table **613** and consumer identification table **614**. This type of interaction site can be operated in conjunction with a central database system **610** as illustrated in FIG. 1, or with a central database system **610** as illustrated in FIG. 2. For example, the promotion storage table **613** could be dedicated to promotions that are valid only at the owner and/or operator of vendor interaction site **650**, and the consumer identification table **614** could be dedicated to consumer identification information that is recognized only by the owner and/or operator of vendor interaction site **650**. For example, if vendor interaction site **650** were owned and/or operated by a supermarket, "in-store" coupon selection and production information could be stored at promotion storage table **613** of vendor interaction site **650**, and identification information relevant to that supermarket's (or supermarket chain's) frequent customer cards could be stored at consumer identification table **614** of vendor interaction site **650**. However, if one or more promotions to be included in a pair is not particular to a specific vendor interaction site **650**, e.g., a manufacturer's coupon, or other identifying information such as a credit card is presented by the consumer, then vendor terminal **652** could access promotion storage table **613** and consumer identification table **614** central database system **610** to select and/or produce paired promotions and/or identify a consumer. Vendor interaction site **650** can also include a promotion input device (not shown), as discussed in regard to vendor interaction site **630**.

Turning now specifically to FIG. 2, which shows further exemplary components of a network structure according to the present invention, these elements being used alone or in conjunction with the network structure shown in FIG. 1, the central database system **610** of FIG. 2 has been pared down to a promotion storage table **613**. In this case, some or all of the functionality previously ascribed to the central database system **610** of FIG. 1 can be

transferred in whole or in part to one or more components. For example, the other database system **660** now contains consumer demographic table **616** and consumer purchase history table **617**. The other database system **660** can be owned and/or operated by, e.g., a third party and/or a practitioner of targeted marketing. In this way, a practitioner of targeted marketing can use other demographic and/or historical purchase information to target promotions. This is especially relevant to a practitioner of targeted marketing who is using proprietary demographic and/or consumer purchase history information, such as that collected by the vendor itself, to determine one or more promotions to be included in the paired promotions provided to the consumer.

Also illustrated in FIG. 2 is a vendor identification site **670** that does not include a promotion input device **636**. The lack of a promotion input device **636** is intended to explicitly illustrate that no promotion need be used in order for a practitioner of targeted marketing to provide a promotion to a consumer. Any time that a consumer is identified using identification input device **638**, paired targeted promotions can be output at promotion output device **634**. This embodiment of vendor identification site **630** is particularly useful for small vendors that manually enter promotions, for vendors where promotions are not common and/or accepted (such as, e.g., physician's offices, legal offices, etc.), or when the vendor interaction site **630** is not used to conduct an actual purchase transaction, such as a vendor interaction site **630** that is formed by an individual's home computer.

Vendor interaction site **680** of FIG. 2 includes an analysis tools table **618** such as found at the central database system **610** of FIG. 1. The analysis tools table **618** at vendor interaction site **680** allows a vendor to develop and store individualized and/or proprietary analysis tools. Thus, data drawn from, e.g., an exercised promotion table **615**, consumer demographic table **616**, and/or consumer purchase history table **617** can be transmitted over network **640** in response to a request from the vendor terminal **682** of vendor interaction site **680** and analyzed at the same vendor terminal **682** using analysis tools stored in analysis tools table **618**. This allows a practitioner of predictive targeting to maintain control over the analysis tools and/or results of analysis.

FIG. 3a and 3b illustrate two different data record structures **710** and **720** that may be used in promotion storage table **613** and consumer identification table **614** of FIGS. 1 and 2. The promotion product field **710c** of promotion record **710** identifies the promoted product to

either the analysis tools stored in analysis tools table **618** or the promotion output device **634** (and/or the promotion/address output device **644**) during production of the promotion. The product class field **710d** of promotion record **710** identifies the class(es) of the product identified in promotion product field **710c**. Exemplary product classes include ethnic classes, health (e.g., diet/non-diet, fat/low fat) classes, religious (e.g., kosher/non-kosher) classes, food type (e.g., snack/non-snack), classes related to preparation characteristics (e.g., preparation time, utensils, seasons), demographic (e.g., child/adult, dog owner/no dog) classes, and or other classes and/or denominations that can be used to classify a product. The product class field **710d** of promotion record **710** identifies the promoted product class to the analysis tools stored in analysis tools table **618**, which, in conjunction with demographic, purchase history, and/or promotion exercise information stored in data tables **615**, **616**, and **617**, determine the relevancy of particular promotions. The product demographics field **710e** of promotion record **710** identifies demographic information of the promoted product identified in promotion product field **710c**. This information can include information related to the age, profession, gender, race, education level, marital status, number of children, pet ownership, and other demographic factors of consumers to whom the product identified in promotion product field **710c** is likely to be relevant. The promotion source field **710f** of promotion record **710** identifies the promoter of the product identified in promotion product field **710c**. The promoter can include, e.g., the manufacturer and/or supermarket that is providing an in-store promotion for the product identified in promotion product field **710c**, and this information can be used to produce the promotion as part of the paired promotions at promotion output device **634** (and/or device **644**). The promotion validity dates field **710g** of promotion record **710** identifies the validity date of the promotion, and this information can be used to produce a promotion as part of the paired promotions at promotion output device **634**. The promotion value field **710h** of promotion record **710** identifies the value (in absolute terms or relative to the price of the product) of the promotion, and this information can be used to produce a promotion as part of the paired promotions at promotion output device **634**.

Consumer identification record **720** is used to identify a consumer using information input at, e.g., identification input device **638**. One or more identification factors input at an identification input device **638** can be compared to identification factor records **720d**, **720e**,

and **720f** to determine or confirm the identity of the individual identified in consumer name field **720c**. When identity is being confirmed, the relevant consumer identification record **720** is first located using consumer name field **720c**, but when identity is being determined, the relevant consumer identification record **720** is first located using identification factor records **720d**, **720e**, and **720f** to locate a match or a near match. Regardless of whether a confirmation or determination is performed, after it has been completed, a consumer will be identified. Consumer information field **720g** is optional and may include information related to the consumer such as, e.g., the address of the consumer, the location of further demographic and/or consumer purchase history related to the consumer or even the demographic and/or consumer purchase history information itself.

FIGS. 4a and 4b illustrate two different data record structures **730** and **740** that may be used to store data regarding exercised promotions in exercised promotion table **615** and data regarding a particular consumer's demographic information in consumer demographic tables **616** of FIGS. 1 and 2. Exercised promotion record **730** is used to store information related to the promotions that a consumer has exercised. The consumer's name is stored in field **730c**, and exercised promotion identification information such as a promotion identification number is stored in field **730d**. Field **730e** stores the value of the exercised promotion identified in field **730d**. Field **730f** of exercised promotion record **730** is used to store the product value at time of use. This is desirable since a promotion may be denominated in absolute terms, whereas an analysis tool may require the promotion value in relative (% of total cost) terms. Field **730g** describes the date that the promotion was exercised to allow a practitioner of predictive targeting to monitor the frequency and/or change in frequency of promotion use. Field **730h** describes the location where a promotion is used, so that a practitioner of predictive targeting can monitor the patterns in location of promotional usage. This is relevant since, e.g., a consumer may exercise promotions more extensively at certain types or locations of stores more often than at others, and this can be used to increase a predictive targeting practitioner's accuracy in determining the likelihood that a particular promotion will be exercised. Further usage information N can be stored in field **730i**. This further usage information may be related to, e.g., the number of promotions used simultaneously, an estimated time required for the consumer to exercise the promotion, a broad class of goods and/or services into which the product falls, and/or other factors

related to exercises promotions.

Consumer demographic record **740** is used to store information related to the demographics of a consumer. The consumer's name is stored in field **740c** and various demographic information is stored in fields **740d**, **740e**, **740f**, and **740g**. This demographic information can relate to, e.g., a consumer's age, profession, gender, race, education level, marital status, number of children, pet ownership, and other demographic factors.

FIGS. 5a and 5b illustrate two different data record structures **750** and **760** that may be used to store data regarding a consumer's purchase history in purchase history table **616** and data regarding one or more analysis tools in analysis tools tables **618** of FIGS. 1 and 2. Consumer purchase history **750** is used to store information related to past purchases by the consumer, regardless of promotion usage. The consumer's name is stored in field **750c**, and purchase information such as a product purchased, amount purchased, frequency of purchases, time of purchase, similar purchases in a same product category, class, and/or industry, product price, date of purchase, location of purchase, and/or other purchase history information is stored in fields **750d**, **750e**, **750f**, and **750g**.

Analysis tools record **760** is used to store information in an analysis tools table **618** as illustrated in FIGS. 1 and 2. This information is related to one or more analysis tools for use by a practitioner of predictive targeting to determine the relevancy of promotions to be paired, and/or to select a particular consumer that will be targeted by predetermined paired promotions. Fields **760c**, **760d**, **760e**, and **760f** of analysis tools record **760** contain, e.g, computer processor instructions and/or other information needed to perform an analysis of the data stored in records **730**, **740**, **750**, and/or even **720** to determine the relevancy of a promotion to a consumer. For example, instructions contained in analysis tools record **760** can be used to determine the relevancy of promotions for certain products and/or product classes described by field **710d** and/or demographics characteristics described by field **710e** of promotion storage record **710** with consumers having certain demographic characteristics stored in table **740**, promotion usage characteristics as stored in table **730**, and/or purchase history characteristics as stored in table **750**. When a promoter wishes to provide a promotion that, according to traditional indicators, is only of low relevance to the consumer, the computer processor instructions and/or other information of analysis tools record **760** can be used to identify a promotion of high relevance to the same consumer so that the two

promotions can be paired, and the likelihood that the low relevance promotion be exercised increased. Likwise, when a predetermined pair of promotions exists, then the computer processor instructions and/or other information of analysis tools record **760** can be used to identify a consumer for which one promotion of the pair is more relevant, and the other promotion of the pair is of low (or unknown) relevance.

FIG. 6 is a flow chart that illustrates an exemplary method for performing the present invention. In this exemplary method, a single low relevance promotion drives the selection of a more relevant promotion to which it is to be paired. This method is particularly appropriate for promoting products in product classes and/or product industries that are "new" in the sense that the consumer has not purchased the product class and/or product industry before, in the sense that a particular store location has not carried a product class and/or product industry before, and/or in the sense that the product class and/or product industry itself is new. In each of these cases, there is little or no data extant for identifying consumers for whom a promotion related to a particular product is relevant. In fact, there might even be data that indicate that a promotion related to a particular product is not relevant to a consumer, in the case where the consumer has previously by-passed opportunities (such as promotions) to purchase a particular product. However, by pairing such a low or low relevance promotion with a more relevant promotion, the exercise rate of the low relevance promotion can be increased.

Thus, there are many reasons why a promoter might wish to provide low relevance promotions to consumers. For example, the product promoted by the low relevance promotion might have a high profit margin, be new to the geographic location, or be a new technological development. Furthermore, the promoted product might represent a foray into a new industry for the promoter, or the product may have recently suffered from lower sales and the promoter is seeking new customers. In each of these cases, the promoter starts with a promotion that is of low relevance to to one or more consumers.

In one exemplary embodiment, the determination of the relevance of a promotion is made by examining a consumer's purchase history record for a line of products from a single promoter (e.g., Kraft cheeses, Post breakfast cereal). For example, suppose that a single promoter produces 14 product lines. Once every (or almost every) product that a promoter sells has been assigned to a promoter product line, the purchase history of the consumer can

be examined to determine the number of purchases that the consumer has made of the promoter's products in each particular product line. The various product categories can then be ranked based upon a frequency (number) of purchases in each promoter product line. An arbitrary cut-off can then be used to classify each of the promoter product lines as "more relevant" or "low relevance." For example, since there are 14 product lines that describe a promoter's product arsenal, the seven promoter product lines that have the largest number of purchases by the consumer can be deemed "more relevant," whereas the seven promoter product lines that have the lowest number of purchases by the consumer can be deemed "low relevance." Based upon this classification, if the promoter wishes to enhance the likelihood that a promotion relating to a product that is classified in a "low relevance" promoter product category is exercised, this promotion can be paired with a second promotion that relates to a product that is classified in a more relevant promoter product line. This particular embodiment is particularly useful in that the determination of the relevance of a promotion is fairly simple, and that both the low relevance and the more relevant promotion is provided by the same promoter. Since promotions represent a cost to the promoter, this facilitates the provision of more relevant promotion and removes the need to compensate a second promoter for the more relevant promotion.

In another exemplary embodiment, the determination of the relevance of a promotion is made by examining the frequency of a consumer's purchases for products of a certain class from a single promoter relative to the total frequency of the consumer's purchases for products of that class (i.e., including both the promoter's products as well as other promoter's products). This approach gives an indication of what is commonly termed the "loyalty" of a particular consumer to the promoter's products. The loyalty of a consumer can also be used to determine the relevancy of a promotion. For example, consider the case of a promotion that relates to a particular brand of ice cream (e.g., Ben and Jerry's ice cream). Using the loyalty approach, such a promotion would be deemed more relevant to a consumer who only rarely purchases ice cream but always purchases the particular brand of ice cream (e.g., Ben and Jerry's). However, also under this loyalty approach, such a promotion would be deemed of low relevance to a consumer who purchases ice cream quite often, but only rarely or never has purchased the particular brand of ice cream (e.g., Ben and Jerry's). This approach thus allows for the pairing of promotions based at least in part upon a consumer's loyalty to a

particular brand.

In another exemplary embodiment, the determination of the relevance of a promotion is made by examining the category purchase history of the consumer. Category purchase history, as used herein, indicates the total purchase history of the consumer within a particular category, whether or not the products originate with a particular promoter. Exemplary categories include, e.g.: ethnic food product categories, such a Mexican, French, or California cuisine; age-related food product categories, such as baby food; health food product categories, such as diet food, lactose-intolerant food; and religious food product categories, such as specialized Kosher products. The use of category purchase history to determine the relevancy of a promotion to a consumer allows the promoter to consider the entirety of a consumer's purchase history, rather than just isolated facets of the purchase history. For example, if a consumer has never before purchased Taco Bell-brand salsa, but often purchases other products that are classified in a "Mexican food category," then both the loyalty-based approach and the product line approach described above will indicate that promotions for Taco Bell-brand Salsa are of low relevance to the consumer. However, by examining the category purchase history of the consumer, such promotions are seen as highly relevant, since the consumer has often purchased products in the Mexican food category before. Thus the entirety of the consumer's purchase history can be examined, and a single promoter can provide both the more relevant and the low relevance promotion if necessary.

In another exemplary embodiment, the determination of the relevance of a promotion is made by examining the promotion usage history of the consumer. A "promotion usage denominator" that relates to, e.g., the products for which promotions are exercised, the value (relative or absolute) of promotions that are exercised, and/or location where promotions are exercised can be used to determine the relevancy of a promotion to the consumer. For example, if a consumer rarely exercises promotions that are worth less than 10% of the dollar cost of the product, than such promotions can be classified as of low relevance to the consumer.

Likewise, in another exemplary embodiment, a determination of the relevance of a promotion can be made by examining the demographic characteristics of a consumer. For example, a promotion that promotes diapers would be deemed more relevant to a consumer with infant children, whereas it would be deemed less relevant to a consumer without infant

children. One advantage of such determinations based on demographics is that they can be made using relatively small amounts data, since an extensive database of consumer purchases need not be maintained.

Naturally, a determination of the relevance of a promotion can be made based on other factors as well as these factors in combination with each other or other factors, in accordance with the present invention.

In regard to FIG. 6, in step **5100**, identification information is received from a consumer to whom the inital promotion is only low relevance. This information could be received using, e.g., an identification input device **638** as illustrated in FIGS. 1 and 2.

In step **5200**, a more relevant promotion is selected from promotion storage table **613** based upon the purchase history characteristics (stored, e.g., in table **615**), consumer demographic characteristics (stored, e.g., in table **616**), and/or exercised promotion characteristics (stored, e.g., in table **617**) of the consumer identified in step **5100**. This can be done in conjunction with the class, demographic, and/or exercise location information related to various promotions stored in, e.g., field **710d**, **710e**, and **710g** of plural data records **710**.

In step **5300**, the more relevant promotion selected in step **5200** is paired with the low relevance promotion that the promoter wishes to provide to the consumer. As described above, "pairing" can indicate printing both the more relevant promotion and the low relevance promotion on a same piece of paper at, e.g., a promotion output device **634**. "Pairing" can also indicate, e.g., displaying the promotions together on a single display.

In step **5400**, the paired promotions are provided to the consumer identified in step **5100**. This can be done, e.g., using a promotion output device **634** described in FIGS. 1 and 2. Naturally, step **5400** need not be performed by the same entity who performs steps **5200** and/or **5300**. Rather, only information used to perform step **5400** need be provided.

FIG. 7 is a flow chart that illustrates another exemplary method for performing the present invention where a single low relevance promotion drives the selection of a more relevant promotion to which it is to be paired. In FIG. 7, specific, more effective consumer characteristics are used to select more relevant promotions. These are illustrated in parallel as steps **5210**, **5220**, **5230**, **5240**, **5250**, and **5260** in FIG. 7, each of these consumer characteristics can also be used alone, in series, or in some combination of in parallel and in series in accordance with the present invention. Thus, the illustrated parallel process flow in

FIG. 7 is for illustrative purposes only, and should not be considered as limiting the present invention.

In step **5210**, a more relevant promotion is selected from, e.g., promotion storage table **613** based at least in part upon frequently purchased products, as determined from the examination of plural records **750** from consumer purchase history table **617** using one or more analysis tools from analysis tools table **618**. The use of a more relevant promotion directed to a frequently purchased product is particularly effective for pairing with a low relevance promotion since the consumer is very likely to be able to retain and/or remember the more relevant promotion, as well as any low relevance promotion paired thereto in step **5300**, until the next purchase.

In step **5220**, a more relevant promotion is selected from, e.g., promotion storage table **613** based at least in part upon consumer loyalty to a product, as determined from the examination of plural records **750** from consumer purchase history table **617** using one or more analysis tools from analysis tools table **618**. Consumer loyalty can be determined by comparing how often a consumer purchases a particular brand of product with the total number of purchases by the consumer of that product and/or product class. For example, if a consumer always purchases POST RAISIN BRAND cereal every time that the consumer purchases any breakfast cereal, then the consumer is loyal to this product even if the total frequency of breakfast cereal purchases is low. The use of a more relevant promotion directed to a product to which the consumer is loyal is particularly effective for pairing with a low relevance promotion since the consumer's attention is immediately directed to the more relevant promotion, and the consumer immediately recognizes the more relevant promotion as valuable. As such, the consumer is more likely to examine and exercise the low relevance promotion paired thereto in step **5300**.

In step **5230**, a more relevant promotion is selected from, e.g., promotion storage table **613** based at least in part upon consumer purchase of a product in high volume, as determined from the examination of plural records **750** from consumer purchase history table **617** using one or more analysis tools from analysis tools table **618**. The use of a more relevant promotion directed to a product which the consumer purchase in high volume is

particularly effective for pairing with a low relevance promotion since the consumer recognizes the more relevant promotion as directed to a product which the consumer needs in relatively high volume. As such, the consumer is more likely to examine and exercise the low relevance promotion paired thereto in step **5300**.

In step **5240**, a more relevant promotion is selected from, e.g., promotion storage table **613** based at least in part upon frequent consumer purchase of a product category, as determined from the examination of plural records **750** from consumer purchase history table **617** using one or more analysis tools from analysis tools table **618**. The use of a more relevant promotion directed to a product in a category which the consumer frequently purchases is particularly effective for pairing with a low relevance promotion since this expands the possibilities for a single promoter to provide both the more relevant promotion and the low relevance promotion. In the examples described above in steps **5210**, **5220**, and **5230**, the more relevant promotion is limited to a product that the consumer already purchases. Naturally, the promoter who wishes to target a low relevance promotion may not have the authority to distribute promotions for those products that the consumer already purchases. For example, Kellogg's might not be authorized to provide a promotion directed to POST RAISIN BRAND cereal, even though the consumer is loyal to this product (and/or has frequently purchased this product, or has purchased this product in high volume). Therefore, by pairing a more relevant promotion directed to a product in a category which the consumer frequently purchases with a low relevance promotion, the promoter is able to achieve all of the above-described advantages, even though the consumer may never have previously purchased the product promoted by the more relevant promotion. This is particularly favorable since the burden of providing a more relevant promotion now falls directly upon the promoter of the low relevance promotion. In other words, since the consumer is likely to purchase the product promoted by the more relevant promotion even in the absence of a promotion, the provision of a more relevant promotion is essentially an unnecessary expense when considered only in light of the product promoted by the more relevant promotion. However, since the provider of the more relevant promotion is now the same promoter that wishes to provide the low relevance promotion, a broader view of the

expense related to the provision of a more relevant promotion is possible.

In step **5250**, a high value promotion is selected from, e.g., promotion storage table **613** based at least in part upon the value of past promotions exercised, as determined from the examination of plural records **730** from exercised promotion table **615** using one or more analysis tools from analysis tools table **618**. The use of a high value promotion as a more relevant promotion is particularly effective for pairing with a low relevance promotion since the consumer has already displayed a propensity for exercising promotions of this type. Thus, the high value promotion is very likely to be worth the consumer's time and attention, and the consumer is likely to retain and/or exercise both the more relevant promotion and the low relevance promotion.

In step **5260**, a promotion exercisable at a certain location is selected from, e.g., promotion storage table **613** based at least in part upon the value of past promotions exercised, as determined from the examination of plural records **730** from exercised promotion table **615** using one or more analysis tools from analysis tools table **618**. The use of a promotion exercisable at a certain location as a more relevant promotion is particularly effective for pairing with a low relevance promotion since the more relevant promotion can be chosen such that the consumer has already displayed a propensity for exercising promotions at the relevant location. Thus, the promotion exercisable at a certain location is likely to be convenient for the consumer, and the consumer is likely to retain and/or exercise both the more relevant promotion and the low relevance promotion.

FIG. 8 is a flow chart that illustrates an exemplary method for performing the present invention. This method is unique in that predetermined paired promotions are provided to, e.g., a practitioner of this method. This type of process is flow is particularly useful when, e.g., a single promoter wishes to leverage the success of a more relevant product to a less relevant product. This may happen when, e.g., a single promoter introduces a new product line, and/or enters a new product category. Also, this method may be used when two or more promoters join together to leverage their individual paired products. For example, a snack food company may pair with a breakfast cereal company, so that each company may, in turn, provide the more relevant promotion and the low relevance promotion to consumers, sharing

the above-described burden of providing the more relevant promotion.

Alternatively, one promoter can compensate the other for the rights to be paired to the other's more relevant promotion, or a practitioner of the present invention can pair promotions independent of the promoters and, when the practitioner is paid on a "per hit" (i.e., per promotion exercised) basis, the practitioner can receive a higher fee.

In step **6100**, information describing the predetermined paired promotions is received by the practitioner of the invention. This includes the information necessary to determine the relevancy of the paired promotions to particular consumers, and may also relate the information necesary to provide the paired promotions to a consumer.

In step **6200**, consumers who are likely to regard at least one of the paired promotions as low relevance and at least one of the paired promotions as more relevant are identified. This can be done by comparing the information regarding the paired promotions received in step **6100** with information about individual consumers stored in, e.g., tables **615**, **616**, and **617**. As described above, more than one invention can be "paired." As the ratio of more relevant promotions to low relevance promotions increases, so does the likelihood that low relevance promotions will be exercised. Any of the individual consumer characteristics described in steps **5210**, **5220**, **5230**, **5240**, **5250**, and **5260** in FIG. 7 can be used to identify the consumers who are likely to regard at least one of the paired promotions as low relevance and at least one of the paired promotions as more relevant in step **6200**.

In step **5400** of FIG. 8, the paired promotions are provided to the identified consumers. This step can likewise include identifying the likely exercisers to those who wish to provide the paired promotions by, e.g., printing out mailing labels on the promotion/address output device **644**.

In FIG. 9, a method according to the present invention is performed in the absence of a predetermined low relevance promotion. In particular, once a consumer is identified (in step **5100**) and a more relevant promotion selected (in step **5200**), then a low relevance promotion is selected from the promotion storage table **613** in step **7300**. Selecting a low relevance promotion in step **7300** can be done in a number of ways, including comparing a list of promotions that a promoter desires to be provided to "new" consumers with the

demographic, purchase history, and/or promotion exercise history of the consumer identified in step **5100** to locate a consumer that has, e.g., demographic, purchase history, and/or promotion usage characteristics that indicate that the consumer may be likely to continue to purchase a product after the initial, low relevance promotion has been exercised. For example, even though a consumer has never purchased a breakfast cereal product, a consumer with a purchase history that indicates brand loyalty to a certain manufacturer may be a prime target for a low relevance promotion for the same manufacturer's breakfast cereal. Thus, by pairing more relevant promotion(s) for a commonly purchased product with a low relevance promotion for, e.g., breakfast cereal products from the same manufacturer, the likelihood that the consumer will exercise the low relevance promotion can be increased. Likewise, a female consumer with children and a purchase history that includes low fat products may be a prime target for a newly developed health food for children, even though the particular consumer has never before purchased the newly developed health food or any food in the particular product class. By pairing the low relevance promotion for the newly developed health food with a more relevant promotion that the female consumer has purchased in the past, the likelihood that the low relevance promotion is exercised can be increased. As another example, if a consumer frequently purchases ethnic entrees, such as Mexican food entrees, then a high value, more relevant promotion relating to Mexican food entrees paired with a low relevance promotion relating to a different product class, such as Mexican snack food, can be used to spur sales of the Mexican snack food when a particular supermarket location begins to stock the Mexican snack food.

Alternatively, the method illustrated in FIG. 9 can be useful to the practitioner of the present invention when the practitioner is paid on a per hit (per promotion exercised) basis. By pairing a low relevance promotion with a more relevant promotion, the total rate of redemption can be increased and the payment to the practitioner increased.

FIG. 10 illustrates a computer system **801** that can form several different units in an embodiment of the present invention. For example, computer system **801** can alternately form the central database system **610**, a vendor interaction site **630**, **640**, or **650**, or an other database system **660** of FIGS. 1 and 2. For this reason, the computer system **801** will be

described using unique reference numerals. When a part of computer system **801** that is analogous to a part in another figure is described, this will be stated in the text. Computer system **801** includes a bus **802** or other communication mechanism for communicating information, and a processor **803** coupled with bus **802** for processing the information. Processor **803** can form processor **611** or **643** and/or one or more of the vendor terminals **632**, **642**, or **652** of FIGS. 1 and 2. Computer system **801** also includes a main memory **804**, such as a random access memory (RAM) or other dynamic storage device (e.g., dynamic RAM (DRAM), static RAM (SRAM), synchronous DRAM (SDRAM), flash RAM), coupled to bus **802** for storing information and instructions to be executed by processor **803**. In addition, main memory **804** may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor **803**. Computer system **801** further includes a read only memory (ROM) **805** or other static storage device (e.g., programmable ROM (PROM), erasable PROM (EPROM), and electrically erasable PROM (EEPROM)) coupled to bus **802** for storing static information and instructions for processor **803**. A hard disk **807** and/or removable media drive **808**, such as a magnetic disk or optical disk, is provided and coupled to bus **802** by way of a disk controller **806** for storing information and instructions. Hard disk **807** and/or removable media drive **808** can contain the tables **613**, **614**, **615**, **616**, **617**, and **618** of FIGS. 1 and 2.

The computer system **801** may also include special purpose logic devices (e.g., application specific integrated circuits (ASICs)) or configurable logic devices (e.g., generic array of logic (GAL) or reprogrammable field programmable gate arrays (FPGAs)). Other removable media devices (e.g., a compact disc, a tape, and a removable magneto-optical media) or further fixed, high density media drives, may be added to the computer system **801** using an appropriate device bus (e.g., a small computer system interface (SCSI) bus, an enhanced integrated device electronics (IDE) bus, or an ultra-direct memory access (DMA) bus). Such removable media devices and fixed, high density media drives can also contain the tables **613**, **614**, **615**, **616**, **617**, and **618** of FIGS. 1 and 2. The computer system **801** may additionally include a compact disc reader, a compact disc reader-writer unit, or a compact disc juke box, each of which may be connected to the same device bus or another device bus.

Computer system **801** may be coupled via bus **802** to a display **810**, such as a cathode ray tube (CRT), for displaying information to a computer user. Display **810** can form a promotion and/or address output device **634** or **644** of FIGS. 1 and 2, especially when the vendor site is an individual's home computer and the paired promotions are advertisements. The display **810** may be controlled by a display or graphics card. The computer system includes input devices, such as a keyboard **811** and a pointing device **812** (e.g., a cursor control), for communicating information and command selections to processor **803**. The keyboard **811** and a pointing device **812** (e.g., a cursor control) can form a promotion, identification, and/or request input device **636**, **638**, and/or **646** of FIGS. 1 and 2. The pointing device **812** (e.g., cursor control), for example, is a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor **803** and for controlling cursor movement on the display **810**. In addition, a printer (not shown) may provide a promotion and/or address output device **634** or **644** of FIGS. 1 and 2, especially wherein the paired promotions are paired coupons provided at the cashier of a supermarket.

The computer system **801** performs a portion or all of the processing steps of the invention in response to processor **803** executing one or more sequences of one or more instructions contained in a memory, such as the main hard disk memory **807**. Such instructions may be read into the main hard disk memory **807** from another computer readable medium, such as removable media drive **808**. Thus, either the main hard disk memory **807** or the removable media drive **808** can include the analysis tools table **618**. One or more processors in a multi-processing arrangement may also be employed to execute the sequences of instructions contained in main hard disk memory **807**. In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions. Thus, embodiments are not limited to any specific combination of hardware circuitry and software.

As stated above, the system **801** includes at least one computer readable medium or memory programmed according to the teachings of the invention and for storing data structures, tables, records, or other data described herein. Examples of computer readable

media are compact discs, hard disks, floppy disks, tape, magneto-optical disks, PROMs (EPROM, EEPROM, Flash EPROM), DRAM, SRAM, SDRAM, etc. Stored on any one or on a combination of computer readable media, the present invention includes software for controlling the computer system **801**, for driving a device or devices for implementing the invention, and for enabling the computer system **801** to interact with a human user. Such software may include, but is not limited to, device drivers, operating systems, development tools, and applications software. Such computer readable media further includes the computer program product of the present invention for performing all or a portion (if processing is distributed) of the processing performed in implementing the invention.

The computer code devices of the present invention may be any interpreted or executable code mechanism, including but not limited to scripts, interpreters, dynamic link libraries, Java classes, and complete executable programs. Moreover, parts of the processing of the present invention may be distributed for better performance, reliability, and/or cost.

The term "computer readable medium" as used herein refers to any medium or media that participate in providing instructions to processor **803** for execution. A computer readable medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, optical, magnetic disks, and magneto-optical disks, such as hard disk **807** and/or removable media drive **808**. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus **802**. Transmission media also may also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

Common forms of computer readable media include, for example, hard disks, floppy disks, tape, magneto-optical disks, PROMs (EPROM, EEPROM, Flash EPROM), DRAM, SRAM, SDRAM, or any other magnetic medium, compact disks (e.g., CD-ROM), or any other optical medium, punch cards, paper tape, or other physical medium with patterns of holes, a carrier wave (described below), or any other medium from which a computer can read.

Various forms of computer readable media may be involved in carrying out one or

more sequences of one or more instructions to processor **803** for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions for implementing all or a portion of the present invention remotely into a dynamic memory and send the instructions over a telephone line using a modem. A modem local to computer system **801** may receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to bus **802** can receive the data carried in the infrared signal and place the data on bus **802**. Bus **802** carries the data to main hard disk memory **807**, from which processor **803** retrieves and executes the instructions. The instructions received by main hard disk memory **807** may optionally be stored on a removable media storage device **808** either before or after execution by processor **803**.

Computer system **801** also includes a communication interface **813** coupled to bus **802**. As described previously, communication interface **813** can itself form a promotion and/or address output device **634** and **644** when paired electronic promotions and/or address data are communicated electronically to another device such as a computer, cash register, credit-card billing device, coupon printer, etc. Such electronic promotions can include, for example, electronic codes automatically transmitted to the register of a vendor, electronic data describing an advertisement to a consumer's personal computer, or deductions from a customer's account upon purchase or order of a product. Communication interface **813** provides a two-way data communication coupling to a communications network **816** that is connected to a local network **815**. For example, communication interface **813** may be a network interface card to attach to any packet switched local area network (LAN). As another example, communication interface **813** may be an asymmetrical digital subscriber line (ADSL) card, an integrated services digital network (ISDN) card or a modem to provide a data communication connection to a corresponding type of telephone line. Wireless links may also be implemented. In any such implementation, communication interface **813** sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

Communications network **816** typically provides data communication through one or

more networks to other data devices. For example, communications network **816** may provide a connection to another computer (not shown) through local network **815** (e.g., a LAN) or through equipment operated by a service provider, which provides communication services through a communications network **816**. Communications network **816** can form network **620** of FIGS. 1 and 2. According to one embodiment, computer **801** is one of the interactions sites **630** while central database system **610** is formed by another computer **801**. In some embodiments, local network **815** and communications network **816** preferably use electrical, electromagnetic, or optical signals that carry digital data streams. The signals through the various networks and the signals on network link **814** and through communication interface **813**, which carry the digital data to and from computer system **801**, are exemplary forms of carrier waves transporting the information. Computer system **801** can transmit notifications and receive data, including program code, through the network(s), network link **814** and communication interface **813**.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.